

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
10 February 2005 (10.02.2005)

PCT

(10) International Publication Number
WO 2005/012720 A1

(51) International Patent Classification⁷: **F02M 59/36,**
63/02

[GB/GB]; 31 Brockenhurst Close, Gillingham, Kent ME8
0HD (GB).

(21) International Application Number:
PCT/GB2004/003127

(74) Agents: **HOPLEY, Joanne, Selina et al.;** David Keltie As-
sociates, Fleet Place House, 2 Fleet Place, London EC4M
7ET (GB).

(22) International Filing Date: 16 July 2004 (16.07.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
03254500.6 18 July 2003 (18.07.2003) EP

(71) Applicant (for all designated States except US): **DELPHI**
TECHNOLOGIES, INC. [US/US]; PO Box 5052, Troy,
MI 48007 (US).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

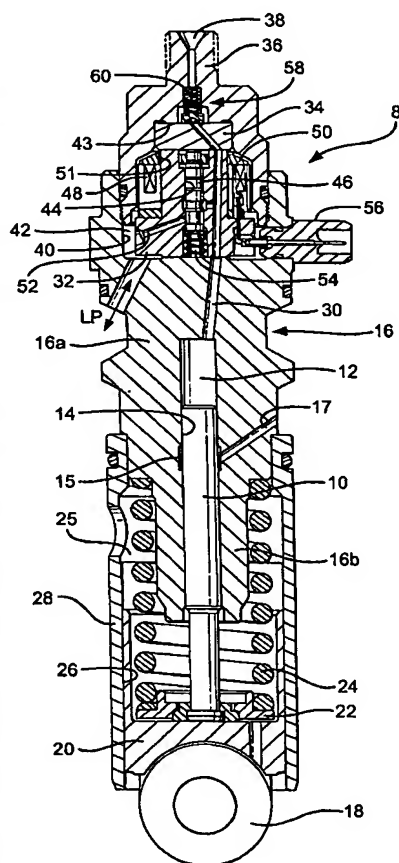
(72) Inventor; and

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,

(75) Inventor/Applicant (for US only): **FELTON, George**

[Continued on next page]

(54) Title: COMMON RAIL FUEL PUMP



(57) Abstract: A common rail fuel pump for an internal combustion engine includes a pumping plunger (10) that is reciprocable within a plunger bore (14) provided in a pump housing (16) under the influence of a drive arrangement (18, 20) to cause fuel pressurisation within a pump chamber (12). An inlet metering valve (46) is operable to meter the quantity of fuel supplied to the pump chamber (12) during the return stroke of the plunger (10). An outlet valve (58) controls the supply of pressurised fuel from the pumping chamber (12) through an outlet passage (30) to the common rail fuel volume in circumstances in which the inlet metering valve is closed. The outlet passage (30) has a pump outlet (38), from where fuel is supplied to the common rail fuel volume. The inlet metering valve (46), the plunger (10) and the pump outlet (38) are arranged in axial alignment, providing a compact and lightweight pump for installation in existing and purpose-built engines.

WO 2005/012720 A1



ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— *with international search report*